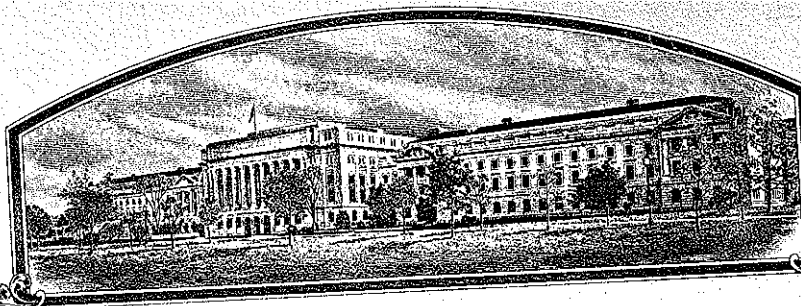


No.

7900005



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Western Plant Breeders

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *seventeen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THAT THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'WestBred Aim'



In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington
this 18th day of October in
the year of our Lord one thousand nine
hundred and seventy-nine

Attest:

Samuel H. Lane
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

W. B. Beyer
Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

FORM APPROVED
OMB NO. 40-R3822

No certificate for plant variety protection may
be issued unless a completed application form
has been received (5 U.S.C. 553).

FOR OFFICIAL USE ONLY

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

1a. TEMPORARY DESIGNATION OF
VARIETY

1b. VARIETY NAME

WestBred Aim

3. GENUS AND SPECIES NAME

Triticum aestivum

5. DATE OF DETERMINATION

3-24-77

7. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP
Code)

RR3 1918 VAN BUREN
CONRAD, MONTANA 59425
PACIFIC, AZ 85001

10. IF INCORPORATED, GIVE STATE AND
DATE OF INCORPORATION

Arizona Dec. 1, 1977

FILING DATE

10-4-78

FEE RECEIVED

\$ 500.00

\$ 250.00

TIME

2:30 P.M.

DATE

10-4-78

8-24-79

8. TELEPHONE AREA
CODE AND NUMBER

406-278-5547

11. DATE OF INCORPORATION

Dec. 1, 1977

2. KIND NAME

Wheat

4. FAMILY NAME (BOTANICAL)

Gramineae

6. NAME OF APPLICANT(S)

WPB ACQUISITION INC.
Western Plant Breeders
WESTERN PLANT BREEDERS, INC.
(a Maryland corporation)

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF
ORGANIZATION: (Corporation, partnership, association, etc.)

Corporation

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE
ALL PAPERS:

Albert E. Carleton
RR3
Conrad, Montana 59425

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

☒ 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)

☒ 13B. Exhibit B, Novelty Statement.

☒ 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)

☒ 13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED
SEED? (See Section 83(a). (If "Yes," answer 14B and 14C below.)

☒ YES ☐ NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE
LIMITED AS TO NUMBER OF GENERATIONS?

☒ YES ☐ NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED?

☒ FOUNDATION ☒ REGISTERED ☒ CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? ☐ YES ☒ NO (If "Yes," give name of countries and dates.)

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? ☐ YES ☒ NO (If "Yes," give name of countries and dates.)

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? ☒ YES ☐ NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.
The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.
Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

Albert E. Carleton
(SIGNATURE OF APPLICANT)

8/28/78
(DATE)

(SIGNATURE OF APPLICANT)

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

1978 FEB 23

ITEM

- 5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.
- 14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

'WESTBRED AIM'

13.A. (Revised)

'WestBred Aim' is a selection from a male sterile facilitative recurrent selection program (MSFRS). The basic MSFRS population was obtained from Mr. Rex Thompson of the University of Arizona at the Mesa Experiment Station in 1975. Mr. Thompson constructed a spring wheat MSFRS population utilizing two male sterile lines selected from 'Siete Cerros' (a white wheat). Some fifty or more red spring wheat varieties were crossed onto these male sterile lines (did not include Super X the red Siete Cerros line). When the F_2 generation of these crosses were growing at Mesa in the spring of 1975, 250 heads were taken from fertile plants by Western Plant Breeders personnel. These heads were used to grow F_3 head rows at Conrad, Montana during the summer of 1975. A single plant was harvested from each F_3 head row and F_4 plant plots were grown in Arizona during the 1975-76 season. Several of the F_4 plant plots were selected for further testing based upon visual selection for good agronomic traits. Ten plants were harvested from each of the selected F_4 plant plots. These plants were grown as separate F_5 plots at Conrad, Montana in the summer of 1976. F_5 plots that did not segregate for male sterile, white seed color and other major genetic traits within the group of ten were bulked and tested as the F_6 generation in Arizona and California in the 1976-77 season. There was a total of some 16 F_6 lines developed and tested in this manner. A portion of the F_6 bulk was increased for basic seed of each line and seed from this increase was used for testing during the 1977-78 season in California, Arizona and Texas. 'WestBred Aim' was the best performing line.

Thus, the parentage of 'WestBred Aim' can not be traced to a set of parental lines or varieties but is best described as having its genealogy from a brood-based spring wheat population.

Once the F_2 heads were selected from the MSFRS population, a pedigree system of handling subsequent generations was employed. One F_3 plant was used to produce the F_4 plant plot and 10 plants from the F_4 was used to produce the F_5 . Non-segregating

F₅ plots were bulked to produce the F₆ generation. This manner of handling segregating generations in wheat leads to rapid elimination of genetic variability.

The bulk method has been used to produce the F₇ and F₈ generations.

The pedigree method led to homozygosity and genetic uniformity. The only variants noted has been the occasional lack of penterance of dwarf genes allowing the primary tiller to obtain a height 5-10cm. over the secondary tillers under some growing conditions. This type of variant should be considered part of the variety.

'WestBred Aim' is a stable variety in agronomic appearance, and performance across several generations and growing conditions. Agronomic data to support stability is presented in Table 1. 'WestBred Aim' shows the same amount of stability for yield, plant height and maturity as two old standard varieties grown in the same trial.

The frequency of the tall tiller variant is less than 1 in 20,000 plants when the variant is present at all.

Exhibit B. Light yellow green is correct and Exhibit C, Item 6, should read 1 and not 2.

7900005

Table 1 Agronomic measurement of "WestBred Aim" Cajeme 71 and Inia 66 grown at the University of Arizona Mesa Station in 1977 and 1978.

<u>Variety</u>	<u>Yield #A</u>		<u>Plant Height CM</u>		<u>Maturity date</u>	
	<u>1977</u>	<u>1978</u>	<u>1977</u>	<u>1978</u>	<u>1977</u>	<u>1978</u>
WestBred Aim	6063	6095	102	112	5-12	5-11
Cajeme 71	5492	5602	82	90	5-10	5-3
Inia 66	4944	5291	80	107	5-10	5-3

13. B. (Revised)

'WestBred Aim' is a semi-dwarf variety with light yellow-green plant color. 'WestBred Aim' has yellow straw with reddish brown heads at maturity. 'WestBred Aim' most closely resembles 'Siete Cerros' and its red sister line 'Super X'. 'WestBred Aim' can be easily distinguished from 'Siete Cerros' in that it is a hard red spring wheat while 'Siete Cerros' has white kernels. 'WestBred Aim' can be distinguished from 'Super X' by flour quality. Several commercial laboratories have tested 'WestBred Aim' and found it to have acceptable flour characteristics while 'Super X' has not been found to have acceptable characteristics. These two varieties have not been compared directly since they have not been grown in the same trial. Thus, it is necessary to make general comparisons to acceptable and unacceptable levels of the various flour traits. (Table 2) Major differences between 'WestBred Aim' and 'Super X' occur in their Farinographs. The differences between peak time 7.5 versus 1.0, stability 7.5 versus 4.0 and MTI of 40 versus 70, can be used to distinguish between 'WestBred Aim' and 'Super X'.

4. 10 day earlier than [3] Chris

5. 15 cm. taller than [3] Chris

Exhibit C. 18.

Stripe rust [2] cd1 3, cd1 6.

(4)

Table 2. Wheat and flour triats of 'WestBred Aim' and 'Super X'.

<u>Wheat Information</u>	<u>'WestBred Aim'</u>		<u>'Super X'</u>	
	<u>Capitol Milling</u>	<u>Doty Labs</u>	<u>Pillsbury</u>	<u>General Mills</u>
Protein	14.0	11.55	9.28	12.9
Moisture	10.40	9.1	10.2	7.4
<u>Flour Information</u>				
Extraction	59.0	71.1	62.6	62.5
Ash	.423	.478	.460	.327
Protein	13.0	10.47	7.65	10.4
<u>Farinograph</u>				
Absorption	70.3	70.0	64.3	69.9
Peak	7.5	6.5	1.0	3.0
Stability	7.5	12.0	4.0	3.5
M.T.I.	40	30	70	85
<u>Baking</u>				
Volume	2875	685 ¹⁾	2075	2550 ³⁾

1. Rated good in test.

2. Family loaf.



Western Plant Breeders

"Breeders of WestBred™ Varieties"

May 21, 1979

Mr. Larry W. Dosier
Examiner, Plant Variety Protection
USDA, AMS, LPG&S Division
National Agricultural Library Building
Beltsville, Maryland 20705

Dear Mr. Dosier:

I have analyzed the data for length of internode below flag length and length of glume awn for 'Westbred Aim' and 'Super X'.

I found both traits to be significantly different between varieties. The following t-tests will provide statistical support for my statement.

INTERNODE LENGTH

\bar{x} 'Westbred Aim'	23 cm	t with 19 df = $\frac{5.0 \text{ cm}}{1.48 \text{ cm}}$ = 3.37**
\bar{x} 'Super X'	18 cm	

Significant at .01 level

GLUME AWN LENGTH

\bar{x} 'Westbred Aim'	2.99 mm	t with 19 df = $\frac{5 \text{ mm}}{.41 \text{ mm}}$ = 12.19***
\bar{x} 'Super X'	7.99 mm	

Significant at .001 level

I trust that these two tests will be sufficient to demonstrate that 'Westbred Aim' and 'Super X' can be separated by internode length and glume awn length.

I would like to know the status of my application on 'Westbred 1000 D' durum, Application No. 7900004.

Respectfully,

Dr. A.E. Carleton

Dr. A.E. Carleton
President

7

AEC/clm

COMPARISONS OF 'WESTBRED AIM', 'SUPER X', 'SIETE CERROS'

<u>TRAITS</u>	<u>'WESTBRED AIM'</u>	<u>'SUPER X'</u>	<u>'SIETE CERROS'</u>
Heading Date	March 30	April 3	April 1
Plant Height	80 cm.	72 cm.	76 cm.
Plant Color	Very waxy bluish	Some wax	Some wax
Hairs on Articules	Very long & many	Short & few	Same as 'Super X'
Flag Leaf Length	25.2 cm.	23.1 cm.	23.0 cm.
Flag Leaf Width	2.0 c.m	2.3 cm.	2.3 cm.
Shape of Ligule	Long & complete circle	½ size of 'Aim'	Same as 'Super X'
Length of Awn of Glume	3 mm.	8 mm.	3 mm.
Internode Length below Flag Leaf	23.0 cm.	18.0 cm.	16.2 cm.

13d

'WestBred Aim' has a very determinate splelete development. The immature and mature heads of 'WestBred Aim' appears blunt on the tip because of this trait.

The rust resistances of 'WestBred Aim' is based on field reading when rust was present. These readings were taken in McMinville, Oregon in 1977 and 1978, Stockton, and Davis, California in 1978, and Beeville, Texas in 1978. Most of the readings have been taken by University Plant Pathologist.

APPLICATION NO. 7900005

VARIETY NAME 'WestBred Aim'

Test Results Based on the American Association of Cereal
Chemists Approved Method (AACC)

1. Straight dough development time ratio:

Farino graph 7.5 peak absorption 70.3 stability 7.5

Dough-Mixer 3.0 min.

2.

Baking Ingredients	Arrival time-- minutes	Peak time	Stability-- minutes	Curve center height B.U.	Height at end B.U.
Yeast					
No rest					
4 hr. rest	4.0	7.5	7.5	490	410

3. Protein percentage 13.0 Flour

CEREAL TECHNOLOGISTS

1435 Clay Street

No. Kansas City, Mo. 64116

P. O. Box 7498

Doty

Laboratories
INCORPORATED

TELEPHONE 471-8580

James W. Doty — Director

008020-0

HAYDEN FLOUR MILLS

Report for

P O Box H

Tempe, Arizona 85281

Date July 29, 1977

Laboratory No. 9942 (9618)

CHEMICAL ANALYSES AND BAKING REPORT

IDENTITY	STANDARD	903-R - Wheat, 7-11		
ASH		0.478%		
PROTEIN (Nx5.7)		10.47%		
MOISTURE		13.80%		
FLOUR COLOR		94 Sl D C		
ABSORPTION		70.0%		
MIXING		Normal		
FERMENTATION		Normal		
LOAF VOLUME		685cc (Good)		
CRUST CHARACTER		Smooth		
CRUMB COLOR		94 Sl D C		
GRAIN AND TEXTURE		Sl. Open - Sl. Harsh		
GASSING POWER				
MALTOSE		Adjusted to proper level		

B--Bright, C--Creamy, CL--Close, D--Dull, G--Gray, O--Open, V--Very, Y--Yellow, SL--Slightly
 Reported on a 14% Moisture Basis

Remarks—

This flour has good mixing strength, but the protein is too low for bakers use. It produces fairly strong doughs, and bread of good quality. This wheat would prove very satisfactory in a bakers mix with higher protein wheats with equal mixing strength.

ARINOGRAH CURVE

MIXING PEAK—

6 1/2 Minutes

BAKING TOLERANCE—

12 Minutes

ABSORPTION—

68.1%

M.T.I.

30

VALORIMETER 87

CEREAL TECHNOLOGISTS

1435 Clay Street

No. Kansas City, Mo. 64116

P. O. Box 7498

Doty

Laboratories

INCORPORATED

TELEPHONE-GRand 1-8580

James W. Doty - Director

008020-0

HAYDEN FLOUR MILLS

P O Box H

Report for Tempe, Arizona 85281

Date July 29, 1977

Laboratory No. 9618

Sample: 903-R - Wheat - 7/11

EXPERIMENTAL MILLING REPORT

WHEAT ANALYSIS

MOISTURE	9.10%
PROTEIN	11.55%
YIELD	71.1%

Milling Report: This wheat has very good milling properties.

STATE OF ARIZONA }
County of Maricopa) ss.

ASSIGNMENT

WHEREAS, WESTERN PLANT BREEDERS, INC., an Arizona corporation (a/k/a) WESTERN PLANT BREEDERS), having its principal place of business at Phoenix, Arizona, has adopted, used and is using the following Certificate of Protection which is registered in the Plant Variety Protection Office of the Secretary of Agriculture:

Certificate No. 7900005 WestBred Aim Common Wheat

WHEREAS, WPB ACQUISITION INC., a Maryland corporation, having its principal place of business in Hayward, California, is desirous of acquiring said Plant Variety Protection Certificate; and

WHEREAS, WESTERN PLANT BREEDERS, INC., states that it has title to the above Certificate and that this transfer does not violate any applicable ruling or order of any court or agency of competent jurisdiction.

NOW, THEREFORE, for valuable consideration, receipt of which is hereby acknowledged, WESTERN PLANT BREEDERS, INC. does hereby assign and set over to WPB ACQUISITION INC., all of the right, title and interest of WESTERN PLANT BREEDERS, INC., in and to the variety of common wheat named:

"WestBred Aim"

together with all goodwill associated with that variety and that name, and together with all rights under and to that Certificate of Plant Variety Protection, No. 7900005, issued by the Secretary of Agriculture of the United States of America on October 18, 1979.

WESTERN PLANT BREEDERS, INC.

By Albert E. Carleton
Albert E. Carleton, President

On this 30th day of September, 1985, before me, appeared Albert E. Carleton, to me personally known, who, being by me duly sworn, did say that he is the president of WESTERN PLANT BREEDERS, INC., an Arizona corporation, and that the foregoing Assignment is on behalf of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my notarial seal at my office in Phoenix, Arizona the day and year last above written.

James M. Bolton aka James M. Smith
Notary Public

My Commission Expires:

November 3, 1986